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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,853

05/16/2006

Rudiger Nowak

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EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1796

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04/29/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/595,853	<b>Applicant(s)</b> NOWAK ET AL.	
	<b>Examiner</b> Darcy D. LaClair	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **4/6/2009** has been entered.

All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **4/6/2008**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The examiner notes that there is a typographical error in the headers of the documents sent by applicant (claims and remarks submitted 8/25/08 and 2/4/09). The application number is listed as 10/95853. This should be 10/595853.

### ***Claim Objections***

2. **Claim 1** is objected to because the resins is(are) not properly claimed in the alternative. It recites "any of" a group of resins linked by "and." In order to claim a group using Markush language, this should be "or." One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as

Art Unit: 1796

being “selected from the group consisting of A, B and C.” See *Ex parte Markush*, 1925 C.D. 126 (Comm’r Pat. 1925) See MPEP § 2173.05(h).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. **Claims 1-2** are rejected under 35 U.S.C. 102(b) as being anticipated by **Nowak et al. (US 2001/0047047)**

It is noted that **Claim 1**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight. Nevertheless, as Nowak discloses the incorporation of Aerosil R202 VV60 and VV90, which are silicas consistent with applicant’s compacted silicas, this is set forth below.

**With regard to Claim 1**, Nowak teaches the addition of pyrogenically produced oxides such as silicon dioxide, including Aerosil R202 (see par [0013]) to polyurethane gels (see par [0002]) and exemplifies contents of 3% (p. 8, Example 1), 10%, 15% (p. 8, Example 2), and 5% (p. 9, Example 3) of Aerosil silica. These gels have an adjustable adhesion capability, specifically useful in application to human or animal body parts. (see par [0098]) Nowak presents hydrophilic Aerosil including the

Art Unit: 1796

compacted product, (see par [0017], Compacted product V and VV). This product is similar to the compacted Aerosils presented by applicant (see applicant's Table 1) and all are obtained from the same supplier. This compaction, specifically of Aerosil 150 which is compacted from 50 to 75 g/l (see par [0017]) and Aerosil R8200, which has a tamped density of 140 g/l (see par [0139]), provides silica which has been compacted as required by applicant. These silicas, exemplified as additives (see p. 8, Example 2 and p. 9, Example 3), would render the system thixotropic, and a system which has lowered viscosity upon stirring would reduce the time required for incorporation, relative to a silica which has not been compacted. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

**With regard to Claim 2**, specifically of Aerosil 150 which is compacted from 50 to 75 g/l (see par [0017]) and Aerosil R8200, which has a tamped density of 140 g/l (see par [0139]).

### ***Claim Rejections - 35 USC § 103***

4. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over

**Nowak et al. (US 2001/0047047)**

It is noted that **Claim 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format.

Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight. Nevertheless, as Nowak discloses the incorporation of

Art Unit: 1796

Aerosil R202 VV60 and VV90, which are silicas consistent with applicant's compacted silicas, this is set forth below.

The discussion of **Nowak**, above in **par 3**, is incorporated here by reference.

**Claim 3** requires a method for reducing the time needed to incorporate compacted hydrophobic silicas into thixotropic adhesives and sealants. The compacted silicas are provided by Degussa AG, (see par [0013]) and the compacted silicas would be made using similar processes. The silicas, having similar structure, would behave in similar manners in the polymer; therefore, these silicas would reduce the time needed to incorporate the compacted silicas into the adhesives. Upon observing this effect, which would be observed based on the exemplified compositions (See Example 1, 2, 3), it would be obvious to one of ordinary skill in the art to employ silica which provides improved processing parameters, which is determined by the time of incorporation.

**Claim 5** requires that the time needed to prepare the thixotropic adhesives and sealants is shorter than would be with compacted hydrophobic silica having a compacted density of 50 g/L. The time to prepare the compositions appears to be inversely related to the compacted density of the silica, based on the thixotropic behavior of these silicas. The silicas with a higher compacted density of 75 g/l (see par [0017]) and 140 g/l (see par [0139]) would inherently have a reduced incorporation time.

5. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Meyer et al. (US 2002/0077388)**

Art Unit: 1796

It is noted that **Claims 1 and 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format. Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight.

**With regard to Claim 1**, Meyer teaches highly hydrophobic structurally modified silicas treated with silyl groups on the surface. (See abstract) The silica is compacted by mechanical effects. (see par [0007]) Meyer exemplifies a ball mill, but does not limit the compacting to this method. (See par [0008]) It would be obvious to one of ordinary skill in the art to employ any similar compacting device to apply the mechanical effects. The tamped density of the silica ranges from 50 to 400 g/L. (Table after par 6) Meyer demonstrates in experiment 1 and experiment 2 that the silica is stirred into either ethoxylated pentaerythritetraacrylate or epoxyacrylate. These are acrylate resins. Myer indicates in Table 2 (pg 3) that the viscosity of the binder + silica is significantly reduced (10-50 fold reduction) in both cases when the silica has been pretreated to give it a compacted, hydrophobic nature. (See p. 3 Table 2) Additionally, there is a reduction of viscosity when shear is applied (See par [0030], Table 2, 6 rpm vs. 60 rpm) This significant reduction in viscosity presents a method which would reduce the amount of stirring necessary to cause the silica to become well dispersed in the composition.

With regard to the preamble, While there is no disclosure that the coating is a adhesive or sealant system, as presently claimed, applicant's attention is drawn to MPEP 2111.02 which states that "if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example,

Art Unit: 1796

the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction". Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the examiner's position that the preamble does not state any distinct definition of any of the claimed invention's limitations and further that the purpose or intended use, i.e. adhesive or sealant, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art coating composition and further that the prior art structure which is a composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

**With regard to Claim 2**, Meyer exemplifies compacted goods having a density of 120 g/l or 50/75 g/L (see Table 1, last line on p. 1, top lines on p. 2).

**With regard to Claims 3 and 5**, Meyer teaches incorporation of the silica into a binder, and exemplifies the significantly reduced viscosity of the composition having silica which has undergone a compacting step. (See par [0030]) See the discussion of Claim 1 above for the discussion of the components required by this method. Achieving a reduction in stirring viscosity is consistent with ***a decrease in mixing time***, because



Art Unit: 1796

better mixing will be afforded by the reduced viscosity. It would be obvious to one of ordinary skill in the art to employ the viscosity reducing silica in order to reduce the mixing time to incorporation.

6. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Meyer et al. (US 2002/0077388)** in view of **Klinge et al. (US 4,877,595)**

It is noted that **Claims 1 and 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format. Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight. Nevertheless as Klinge exemplifies a pressing filter belt, this is set forth below.

The discussion of **Meyer**, above in **par 5**, is incorporated here by reference.

**With regard to Claim 1**, Meyer teaches highly hydrophobic structurally modified silicas treated with silyl groups on the surface. (See abstract) The silica is compacted by mechanical effects. (see par [0007]) Meyer exemplifies a ball mill, but does not limit the compacting to this method. (See par [0008]) Klinge teaches silica compressed by a filter equipped with a pressing band. (See abstract) Klinge teaches that the silica exhibits the same transparency, and a slow increase in density occurs at the entry area of the band. (see col 3 line 35 and 55) This method also allows greater compression than known methods. (See col 3 line 40-42) yielding densities of 140-190 and 90-120 g/l (See col 4, Examples) It would be obvious to one of ordinary skill in the art to employ the method of Klinge to effect the mechanical compaction desired by Meyer.

**With regard to Claim 2**, Meyer exemplifies compacted goods having a density of 120 g/l or 50/75 g/L (see Table 1, last line on p. 1, top lines on p. 2). Klinge teaches compacted silicas having densities of 140-190 and 90-120 g/l (See col 4, Examples) As these silicas have commensurate densities, it would be obvious to one of ordinary skill in the art to employ the method of Klinge for compaction.

**With regard to Claims 3 and 5**, since the particular limitation involved is the same as the one described above, in the discussion of Meyer, attention is drawn to the discussion of **Meyer**, above.

7. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Gruenewaelder et al. (WO 2001/090271)** in view of **Hasenzahl et al. (US 2002/0197311)**

It is noted that the international Patent Application WO publication is being utilized for date purposes. However, since **WO 2001/090271** in German, in the discussion below, the US equivalent for **WO 2001/090271**, namely US **US 6,251,162**, is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

It is noted that **Claims 1 and 3**, with respect to the preparation of the compacted hydrophobic, pyrogenic silica, are stated in product by process format. Absent showing of criticality, the process limitations in a product-by-process claim do not carry patentable weight.

Art Unit: 1796

**With regard to Claim 1**, Gruenewaelder teaches a polyurethane adhesive paste having a silicic acid thickener in a concentration of 2.0 to 8.0% by weight. (See abstract) Silicic acid is equivalent to silica. Gruenewaelder teaches that the thickener is intended to ensure plastic flow behavior, or in other words flows with shear stress. This silica should be a pyrogenic, hydrophobic silica. (See par [0018]) Gruenewaelder teaches Aerosil R202 (see par [0032]) but does not specifically teach compaction of this silica. Hasenzahl teaches a pyrogenic silicon dioxide with a tamped density of 80 to 250 g/l, (see abstract) preferably 100 to 200 g/l, (see par [0018]) prepared by rendering the surface hydrophobic (see par [0025]) and compaction by means of a rotary vacuum filter equipped with a compacted strip (see par [0026]), which is consistent with a pressing filter belt. Hasenzahl exemplifies Aerosil 200 VV as the compacted silica. (See par [0026]) Hasenzahl teaches that the preparation can be applied to pastes (see par [0032]) and has good effect as a suspension stabilizer and gelling agent, and improves mechanical stability. (See par [0010]) It would be obvious to one of ordinary skill in the art to use the treated silica of Hasenzahl in the adhesive paste of Gruenewaelder, both because of it's similarity (Aerosil 200 series) and because of the good effects, including stabilizer and mechanical stability agent, which are consistent with Gruenewaelder's reasons for incorporating the silica.

With regard to the behavior of the silica in Gruenewaelder's composition, thixotropy is specifically desired (see par [0018]) and this is in order that the composition would have its stability improved when applied (no shear) but will have a

Art Unit: 1796

reduced viscosity upon mixing or applying (shear). This is consistent with causing a reduction in time for incorporation of the silica.

**With regard to Claim 2**, Gruenewaelder teaches Aerosil R202 (see par [0032]) and Hasenzahl teaches Aerosil 200 VV (see par [0026]) which has been compacted. Hasenzahl teaches that the preferred density is 100 to 200 g/l. (see par [0018])

**With regard to Claims 3 and 5**, Gruenewaelder teaches incorporation of the silica into a binder, and teaches the need for a reduced viscosity under shear stress. (See par [0018]) See the discussion of Claim 1 above for the discussion of the components required by this method. Achieving a reduction in stirring viscosity is consistent with **a decrease in mixing time**, because better mixing will be afforded by the reduced viscosity. It would be obvious to one of ordinary skill in the art to employ the viscosity reducing silica in order to reduce the mixing time to incorporation.

### ***Response to Arguments***

8. Applicant's arguments filed **4/6/2009** have been fully considered. Specifically, applicant argues **(A)** Claim 3 has been amended in accordance with the Examiner's suggestion, and the rejection is traversed, **(B)** Claims 1 and 3 have been amended to specify that the adhesive and sealant systems are rendered thixotropic and time required for incorporating said compacted hydrophobic pyrogenic silica into said adhesive and sealant systems is reduced compared to time for incorporation of silica that has not been compacted with a roller compactor or by a pressing filter belt, **(C)** The rejection of Claims 1 and 2 under 35 U.S.C. 102(b) over Hartmann is traversed on the

Art Unit: 1796

grounds that Hartmann describes a surface modified, hydrophobic silanized silica powder which has been structurally modified by a ball mill, and therefore has no thickening effect; Hartmann does not disclose a compacted silica as now defined in the claims, and there is no suggestion that the time for incorporation of the silica into the adhesive would be reduced, **(D)** The rejection of Claims 1-3 and 5 under 35 U.S.C. 102(b) in view of Meyer et al. is traversed on the grounds that Meyer describes a functionalized modified silica having silyl groups which are hydrophobic on the surface; although this silica has been modified by a ball mill, the resulting silica does not have any thickening effect, and is not incorporated faster than with silica not compacted as defined in Claim 1, **(E)** The rejection of Claims 1-3 and 5 under 35 U.S.C. 102(b) in view of Meyer et al. is traversed on the grounds that Adams describes a method for densifying particulate silica with a screw feeder, and does not show compaction with a roller compactor or filter belt and the method is not so closely related to the way in which applicant's silica is formed as to create a presumption that the end products would be the same, **(F)** The rejection of Claims 3 and 5 under 35 U.S.C. 102(b) over Hartmann is traversed on the grounds that Hartmann is traversed on the grounds that Hartmann describes silica powder which has been structurally modified by a ball mill, and there is no thickening effect observed following the procedures shown by Hartmann, therefore one of ordinary skill in the art wishing to produce an adhesive composition with a good thickening effect would not select Hartmann's silica powder.

**With respect to arguments (A),** Applicant's arguments have been considered and the rejection of claim 3 under 35 USC §112 been withdrawn *in light of applicant's*

Art Unit: 1796

**amendment** reciting the adhesives and sealants are rendered thixotropic by incorporation of silica. Support for the amendment on page 1, line 16-17 is acknowledged.

**With respect to argument (B)**, Support for the amendments to **Claims 1 and 3** is acknowledged on page 21, line 24-26, page 26, line 8-13, and page 27, line 21-24.

**With respect to argument (C)**, the rejection over **Hartmann et al. (US 5,959,005)** is withdrawn in light of the addition of the features of thixotropy and reduction of time to the amended claims

**With respect to argument (D)**, the argument is moot in view of the rejection over **Meyer et al. (US 2002/0077388)** under 35 USC 103, set forth above.

**With respect to argument (E)**, the rejection over **Adams et al. (US 7,144,930)** is withdrawn in light of the addition of the features of thixotropy and reduction of time to the amended claims.

**With respect to argument (F)**, upon reconsideration the obviousness type rejection over **Hartmann et al. (US 5,959,005)** is withdrawn. Hartmann teaches that the silica can be used as a free-flow agent in systems (see col 1 line 56) which is contrary to a thickened system.

**With respect to the rejection over Nowak et al. (US 2001/0047047)**, as applicant has failed to respond to these rejections, they are maintained and are still applicable as set forth above with new rationale. Nowak teaches the incorporation of Aerosil R202 VV60 and VV90, which are silicas consistent with applicant's compacted silicas, into polyurethane and other polymers to confer a thixotropic effect.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darcy D. LaClair  
Examiner  
Art Unit 1796

/DDL/

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